CLAIMS

1. A radiation detection apparatus comprising a radiation detector and a lens arrangement, the lens arrangement comprising a polarising element and an optical corrector, the polarising element being arranged to selectively transmit radiation of a first polarisation and to selectively reflect radiation of a second polarisation, and the optical corrector having a first and a second surface, where at least one of the first and second surfaces is shaped to correct aberrations present in the lens arrangement.

2. A radiation detection apparatus as claimed in claim 1 wherein the optical corrector is arranged to support the polarising element upon a surface thereof.

3. A radiation detection apparatus as claimed in claim 1 or claim 2 wherein the optical corrector is physically located between the polarising element and the radiation detector,

4. A radiation detection apparatus as claimed in claim 3 wherein a rearmost surface of the optical corrector is aspherical or spherical.

5. A radiation detection apparatus as claimed in any of claims 1 to 4 wherein the optical corrector is fabricated from a material having a density of around 30 gl^{-1}.

6. A radiation detection apparatus as claimed in any of claims 1 to 5 wherein the optical corrector is fabricated from a material having a refractive index of between 1.001 and 2.

7. A radiation detection apparatus as claimed in any of claims 1 to 6 wherein there is provided a further optical corrector interposed between the optical corrector and the radiation detector.

8. A radiation detection apparatus as claimed in claim 7 wherein the further optical corrector has a front surface with an elliptical cross-section and an aspherical, plane or spherical profile.

9. A radiation detection apparatus as claimed in claim 7 or claim 8 wherein the further optical corrector has a rear surface with a different profile to the profile of the front surface.

10. A radiation detection apparatus as claimed in any of claims 7 to 9 wherein the further optical corrector is fabricated from a plastic material.

11. A radiation detection apparatus as claimed in any of claims 7 to 10 wherein the further optical corrector is fabricated from a plastics foam material.

12. A radiation detection apparatus as claimed in any preceding claim wherein the radiation detector is an imaging radiation detector.

13. A radiation detection apparatus as claimed in any of the above claims wherein the polarising element is arranged to focus radiation having the second polarisation.

14. A radiation detection apparatus as claimed in any preceding claim wherein the radiation detection apparatus is arranged to detect millimetre wavelength radiation.